108.1 - Alcohols and Ethers [Oxygenates] in Reference Fuels (liquid form)

SRMs 1829, 1837, 1838, and 1839 are for calibrating instruments and validating methods used to determine various alcohols in gasoline. SRM 1829 is issued as a set of six sealed 20mL ampoules; SRMs 1837, 1838 and 1839 are each issued as a set of five sealed 20mL ampoules.

SRMs 2286 through 2297 were produced in response to the U.S. EPA Final Rule on Reformulated Gasoline aimed at reducing the volatile organic compounds emitted from gasoline. They consist of varying quantities of alcohol and ether (oxygenate) solutions in gasoline. SRMs 2286 through 2293 are certified for constituent oxygenate concentration and resultant oxygen concentration in gasoline. Each SRM unit is issued as a set of three sealed 20mL ampoulestwo ampoules contain oxygenate and one ampoule contains base reference gasoline. SRMs 2294 through 2297 are certified for oxygenate, sulfur, benzene, and toluene, with reference values for olefins and aromatics. Each SRM unit is issued as a set of two sealed 20mL ampoules.

Technical Contact: franklin.guenther@nist.gov

PLEASE NOTE: The tables are presented to facilitate comparisons among a family of materials to help customers select the best SRM for their needs. For specific values and uncertainties, the certificate is the only official source.

SRM	1829	1837	1838	1839	2286	2287	2288	2289	2290	2291	2293	2294	2295	2296
Description	Alcohols in Reference Fuels	Methanol and Butanol (in Gasoline)	Ethanol (in Gasoline)	Methanol (in Gasoline)	Ethanol (in Gasoline)	Ethanol (in Gasoline)	t-Amyl-methyl Ether (in Gasoline)	t-Amyl-methyl Ether (in Gasoline)	Ethyl-t-butyl Ether (in Gasoline)	Ethyl-t-butyl Ether (in Gasoline)	Methyl-t-butyl Ethyl (in Gasoline)	Reformulated Gasoline (nominal 11% MTBE)	Reformulated Gasoline (nominal 15% MTBE)	Reformulated Gasoline (nominal 13% ETBE)
Unit of Issue	(set (6))	(5 x 20 mL)	(5 x 20 mL)	(5 x 20 mL)	(set (3))	(set (3))	(set (3))	(set (3))	(set (3))	(set (3))	(set (3))	(2 x 20 mL)	(2 x 20 mL)	(2 x 20 mL)
	Concentration (mass fraction, in %)													
Methanol	0.335			0.335										
Ethanol	11.39		11.39											
Methanol and t-Butanol	10.33 + 6.63	10.33 + 6.63												
Oxygenate					5.73	10.07	12.78	17.30	12.78	17.18	14.86	10.97	14.54	13.02
Oxygen					2.02	3.53	2.02	2.73	2.01	2.70	2.71	2.01	2.66	2.06
Sulfur												0.00409	0.0308	0.0040
Toulene												8.29	7.89	8.02
Benzene												1.03	0.99	1.0

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2297 **Reformulated Gasoline (nominal 10% Ethanol)** **(2 X 20 mL)**
9.91
3.50
0.03037
8.27
1.04